Claims

What is claimed is:

1. A method for synthesizing speech, comprising:
generating a pitch contour for said synthesized speech; and
increasing an amount of energy in low frequency components of said pitch contour.

2. The method of claim 1, wherein said low frequency components are below approximately 10 Hz.

3. The method of claim 1, further comprising the step of interpolating discrete pitch values to generate said pitch contour.

4. The method of claim 1, wherein said increasing step further comprises the step of adding band limited noise to said pitch contour.

5. The method of claim 4, wherein said band limited noise is comprised of one or more sinusoidal components.

6. The method of claim 4, wherein said band limited noise may be expressed as a x sin ($\varpi t + \Phi$), where a is the amplitude of the pitch variation, $\varpi = 2\pi\ f_r$; and f_r is the rate of pitch variation.

7. The method of claim 1, wherein said increasing step further comprises the step of filtering said pitch contour with an impulse response filter having a pole at a desired low frequency value.

8. The method of claim 1, wherein said increasing step serves to add vibrato to said pitch contour.

9. The method of claim 1, wherein said pitch contour comprises a pitch value associated with each syllable of said speech.

10. A method for synthesizing speech, comprising:
generating a pitch contour for said synthesized speech; and
adding band limited noise to said pitch contour.

11. The method of claim 10, wherein said band limited noise is added only to low frequency components below approximately 10 Hz.

12. The method of claim 10, further comprising the step of interpolating discrete pitch values to generate said pitch contour.

13. The method of claim 10, wherein said band limited noise is comprised of one or more sinusoidal components.

14. The method of claim 10, wherein said band limited noise may be expressed as a $x \sin(\varpi t + \Phi)$, where a is the amplitude of the pitch variation, $\varpi = 2\pi f_r$; and f_r is the rate of pitch variation.

15. The method of claim 10, wherein said adding step serves to add vibrato to said pitch contour.

16. The method of claim 10, wherein said pitch contour comprises a pitch value associated with each syllable of said speech.

17. A method for synthesizing speech, comprising:

generating a pitch contour for said synthesized speech; and

filtering said pitch contour with an impulse response filter having a pole at a desired low frequency value.

18. The method of claim 17, wherein low frequency value is below approximately 10 Hz.

19. The method of claim 17, further comprising the step of interpolating discrete pitch values to generate said pitch contour.

20. The method of claim 17, wherein said increasing step serves to add vibrato to said pitch contour.

21. The method of claim 17, wherein said pitch contour comprises a pitch value associated with each syllable of said speech.

22. A speech synthesizer, comprising:

a pitch predictor that generates a pitch contour for said synthesized speech; and

a low frequency energy booster to increase an amount of energy in low frequency components of said pitch contour.

23. The speech synthesizer of claim 22, wherein said low frequency energy booster adds band limited noise to said pitch contour.

24. The speech synthesizer of claim 22, wherein said low frequency energy booster filters said pitch contour with an impulse response filter having a pole at a desired low frequency value.